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Timber Surveys - Chugach (PWS)
Afognak Island
1933

December 30, 1933

REPORT OF TIMBER RECONNAISSANCE

Extensive timber reconnaissance
of Afognak Island and the small
adjacent islands, made between
April 20 and June 8, 1933, by

J. P. WILLIAMS, Forest Examiner



Sent PWS Rev

REPORT OF TIMBER RECONNAISSANCE

Afognak Island, Chugach National Forest, Alaska

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REPORT OF TIMBER RECONNAISSANCE

Afognak Island, Chugach National Forest, Alaska

December 30, 1933

Introduction

This report covers an extensive timber reconnaissance of Afognak Island and the small adjacent islands, made between April 20 and June 6, 1933.

The party consisted of Forest Examiner Jay Williams, Captain Earl Jacobsen in command of the Forest Service launch "Chugach", H. R. Sarber, field assistant and Orin Storey, cook. The launch left Cordova April 17 and actual field work was begun three days later in Danger Bay.

Snow was from three to four feet deep in places and heavy rains soon made traveling very difficult. Snowshoes were purchased in Kodiak and used for a time. Residents claimed that the snowfall was unusually heavy and late in disappearing. Field work was completed on June 6, and the party then left for Cordova. Captain Jacobsen's efficient and skillful handling of the launch greatly facilitated the accomplishment of the work which was at times difficult on account of the exposed nature of the coast line and the constant ocean swell.

The existing maps of Afognak are quite erroneous, especially as regards shore lines around Seal and Perenosa Bays. Fortunately, an advance map of the recent surveys in this locality was given us by Lieutenant Scaife in charge of the Coast and Geodetic Survey party there. Perenosa and Seal Bays are just the reverse of the existing maps. Seal Bay is comparatively shallow and small while Perenosa Bay extends inland several miles farther than is shown on existing charts. Many rocks and reefs exist in these bays and great caution is necessary in navigating them.

The Region

Afognak Island lies northeast of Kodiak Island and both are separated from the Alaska Peninsula by stormy Shelikof Straits. Afognak is in approximately 152 and 153 west longitude and between 58 and 59 north latitude. The principal rock formation is a black

shist. The northwestern part of the island is rough and rugged with elevations up to 3,000 feet while the southeastern part is lower, more rounded and much of the area is below timberline. The area of the island is 686 square miles or 439,296 acres.

Everywhere, except on the higher elevations where the wind has blown it away, the first six or eight inches of the top soil is volcanic ash from the Katmai eruption of 1912, with a thin layer of vegetable matter on the surface. Soil tests disclose several layers of this ash. This outstanding feature of the soil results in better drainage and a total absence of true muskegs so common in southeastern Alaska. There is a more even distribution of timber cover than in southeastern Alaska.

There is no well defined scheme to the topography of the island. Many hills and ridges are irregular and disconnected, with some of the elevations entirely isolated. The coast line is extremely broken and irregular. A lowland extends across the island from Danger Bay to Seal and Perenosa Bays with a trough-like connection to Alimvoak Bay. Some granite formations were observed in the vicinity of Blue Fox Bay.

The principal streams are in Perenosa, Alimvoak and Litnik Bays but are hardly of sufficient size to be called rivers. Perenosa and Litnik are outstanding salmon streams.

Climate.

The climate of this region is wet and mild. It is not as wet as Prince William Sound. The rainfall, or rather yearly precipitation, in 1932 was 60 inches at Kodiak and 140 inches at Cordova. Exposed grassy headlands which bare early convey the impression to anyone passing in a boat that the snowfall is light, which was certainly not true in 1933 since snow lay in the timber on north slopes until the middle of June. The combination of heavy moss and volcanic ash seems to be a perfect medium for retaining frost which remains in places for a long time after the snow has melted.

This island is very pleasant in good weather. It has many parks and grassy glades scattered through the timber and numerous winding, clear water streams with sandy bottoms.

Settlement.

The village of Afognak on the south side is the only town settlement. The population is 300, including natives and whites. Fishing, supplemented with gardening, is the means of livelihood. There appeared to be a great deal of destitution in the spring of 1933. Several head of cattle were seen in and around the village and the inhabitants complained of the damage done to their cattle by brown bears. A cow had recently been injured by a brown bear at the time we were there. The inhabitants are largely to blame for this condition as they haul dead cattle out into the timber surrounding the town and leave them unburied, a practice which gives the bears a chance to acquire a taste for beef.

The fish hatchery, operated by the Bureau of Fisheries was discontinued in 1933 some time after the timber survey was made.

Wild Life.

One touch which is lacking and which would add greatly to the charm of the locality is a variety of wild life. Brown bear and red fox are the principal mammals indigenous to the island and these are not very abundant. Ptarmigan are the only game birds which are abundant and these are confined to the higher elevations.

Bears are not as plentiful on this island as in many places in Southeastern Alaska. They are not as numerous on a given area. The heavy and late lying snowfall afforded an excellent opportunity to obtain a good idea of their numbers. Mr. Sarber and myself agreed on an estimate of 150 bears for the whole island. They average larger than the southeastern Alaska browns. One track was measured which spread $10 \frac{7}{8}$ inches across the front pads, two others $10 \frac{1}{2}$ inches and an number $9 \frac{1}{2}$. Kodiak appears to have a much more dense bear population, judging from the part of it which we saw. They are also much easier to see on Kodiak in the spring because of the absence of coniferous timber. It would be easily possible to overhunt Kodiak and kill off all the unusually large and desirable males.

Afognak appears capable of supporting a large deer population. Some form of edible game should be stocked to furnish sadly needed emergency food for the residents. This subject should be given as much consideration and support as the timber interests. Right now it is more important.

27-24
41-62
45-136
49-272

Eight elk were turned loose in the vicinity of Afognak village several years ago and in June 1933 there were seventeen in the herd. The food supply is apparently suitable and abundant but the increase is not what it should be. Some of these animals may have been killed for food. They are in fine condition and do not range over much territory. This part of the island will undoubtedly soon have a considerable percentage of dead material.

In the opinion of the writer Afognak Island contained a much more dense bear population at one time than it does at present. There are many very deeply worn trails along the streams and even on the tops of the highest ridges. Possibly the Katmai eruption of 1912 caused a food shortage on Afognak greater in proportion than existed on Kodiak where there is no coniferous timber and much open windswept country and many bears left Afognak and swam over to Kodiak in search of food. It would be interesting to try and obtain some direct evidence as to this possibility.

Rabbits should thrive on Afognak and if so would be of value for food. Possibly this is one of the stocking projects which the Alaska Game Commission has in mind.

Leary 1948

One of the physical peculiarities of the region is the fact that the volcanic ash is gradually filling up the lakes and all sluggish water so that in time it may destroy the red salmon spawning grounds. The damage from this cause is already reported to be quite extensive on Kodiak. Charts are very inaccurate in the heads of the bays. They may show five fathoms and there are actually less than two. This inaccuracy is probably due to the bays having filled with volcanic ash since the surveys were made.

Squid 1948

Estimates

The estimates were prepared by chances which center around the principal bays. They are not always strictly logging chances but do conform quite closely with the natural watershed boundaries.

The gross acreage in the tabulation shows the area within the exterior limits of the commercial type at the time the examination was made. Young growth is spreading out quite rapidly into the non-timbered portions of the island but this advancement is more than offset by the loss of timber due to the beetle infestation which is very severe at the present time.

spence beetle

Other vegetation consists of alder, willow, currants and huckleberry.

The estimates for the Litnik and Danger chances do not show any dead timber. The first cruising was done here and as this is the part of the island least affected by infestation no figure was set up for the dead timber content of the forest. At the rate the timber is dying elsewhere and the speed with which the insects are spreading, this part of the island will undoubtedly soon show a considerable percentage of dead material. No attempt was made to show the different types outside of the timbered areas. They are principally grass, barren and brush.

No estimate is given for Shuyak Island. A picture accompanying this report shows the character of much of the island a short distance back from the beach. The available maps were so incorrect and the weather so bad that it was not thought worth while to spend the time attempting much of a reconnaissance of this island. The northwest end has good timber growing possibilities but on the southwest end there is a great deal of barren, rocky ground. None of the timber seen on Shuyak is large. There are numerous small lakes and the tops of the hills are covered with scrub. There is less beetle infestation here than on Afognak Island but there is some in places.

There is practically no commercial timber above 600 feet elevation but scattered clumps of short limby trees run up in a few places to about 1200 feet in elevation.

Cutting for volume table data disclosed the fact that this spruce is extremely hard, dry and tough. It would manufacture into a good grade of box lumber with very little "shop" and no "clears."

It should be borne in mind that the present crop of mature timber on the island is practically past saving unless some great natural intervention stops the spread of the beetle pest. This is a fact of little consequence as the important thing is the potential value of the island for timber production. Volcanic ash is every where, even in the bark and moss on the trees. The ash is a nuisance from the logging standpoint, having about the same consistency as emery dust and being very severe on cutting tools.

Devils Club is very abundant, especially in the mature timber. Other vegetation consists of alder, willow, currants and huckleberry.

The following measurements are of one of several very typical trees which were cut down in various places on the island and measured while cruising. "L" is for length, "D.O.B.", diameter outside the bark, "D.A.S.", diameter above the swell. The tree was measured at 1.5 feet above the ground and from this point at 16.3 foot lengths to a 6 inch top and also to the tip for total height.

L	D.O.B.	D.A.S.	Total height 74.6
1.5	13.5	12.0	Height to a 6" top 45.6
16.3	11.2		
16.2	8.4		Approximate age 202 years
11.5	6.0		which was about as close
	150 Ft. B.M.		as we could count.

Field Methods

In rolling or fairly level country the field work consisted of traveling through the woods with the idea of seeing as much of the country as possible, which could not be seen from the water. Ocular sample acres were often estimated and measured sample acres were taken in the different types of spruce, such as poles, piling, etc. Elevations which afforded a good view were frequently climbed to find the extent of types. The fact that the timber is all spruce somewhat simplified this work.

Included in this report is a list of volumes of representative trees which were actually cut down and measured with steel tape. Diameters were taken at the base, above the swell and at intervals of 16.3 feet to a 6" top, where the top was intact and merchantable. Estimates were made to the nearest 5 MBF of the amount of merchantable live timber per acre and a further estimate of the additional amount of dead timber which would be merchantable if alive.

A rowboat and outboard motor was used in inside waters as much as possible and at times the cruiser and his assistant separated in order to cover more country.

Litnik Chance

Gross timbered area	29952	Acres
Commercial spruce timber /	336,100	
	MBM	

11.2 M/A

The good timber in this chance is mostly along the sides of the valley between the beach and the foot of the lake. Along the sides of the lake and especially on the north side, the timber belt thins out and the quality is not so good. There is some

surprisingly good timber on the outside in the vicinity of Kazakof Cape. There are some good pole stands along the southwest side of the lake. Practically all this timber in this chance is accessible. All the timber on nearby Whale Island is dead. The only commercial timber on Raspberry Island is as shown on the map.

Danger Chance

Gross timbered area	22,528	Acres
Commercial spruce timber	214,087	MBM

95M/A

The east side of Danger Bay is from near the head to the vicinity of Kostromitinof Cape, is very well timbered and comparatively free from open spots which are common on the west side of the bay and in the timbered areas at the head of the bay. Much of this stand averages 25M per acre and is a very fair quality of saw timber, quite sound but with very little clear. It would be considered good box lumber in southeastern Alaska. There is less defect and much less dead timber than in most places on the island.

The rock outcrops seen are slate and the formation appears to be greatly folded and broken. Drainage is good on the slopes which are seldom excessively steep. It seems quite unusual to find so many small lakes and ponds in this broken slate formation but they are very common, much more so than is shown on the map.

From the anchorage out towards ~~the~~ Cape Kostromitinof the belt of good timber continues. Some sample acres were measured in this locality which were fair examples of much of the area and they ran about 25 M per acre. One tree was cut down which measured 13.5" at 3' above the ground and contained 215 B.F. to a 6" top. It was 200 years old, dense, fine grained and very stringy and tough.

Two days were spent cutting trees and measuring for volume at the anchorage on the east side of Danger Bay. The result of this work appears in a separate tabulation. Considerable wind check showed up but the checks do not extend very far into the tree or up the trunk. They may have been caused by the cold north winds in winter.

There has been a large amount of hand logging in this bay. No favorable places have been overlooked and the work has been carelessly and wastefully done. In some places a small donkey engine or power from a boat may have been used to skid the trees into the water. The falling has been poorly done and a large amount of material has been left in the woods.

Izhut Chance

Gross timbered area	29,440	acres
Commercial spruce timber	244,295	MBM
Standing dead timber	4,454	"

83 11/10

There is a continuation of the good timber belt from Danger Bay around the north side of Duck Bay, the belt being narrower and merging into a shorter, lighter stand on the foot hills of the main mountain. The territory between the main chain of lakes which extends across this peninsula and the outer coast has a light timber stand by volume with many pole patches. Most of the trees in this locality are covered with a very luxuriant moss which gives the woods an almost tropical appearance. Quite characteristic of this area is a sprinkling of older, larger trees. They probably started in a scattering stand very much in the open, gradually seeding the spaces between which filled with the pole stands.

The larger lakes have been sketched on the map but there are many small ponds on this peninsula which have not been shown. An old native trail and canoe portage runs from Duck Bay to the left hand arm of Izhut Bay. A very deeply worn bear trail parallels the largest creek coming into Duck Bay. Winding in and out among the limby spruces, it would make an ideal place to observe and photograph these animals.

Most of the drainage of Izhut Bay is timbered and the best areas are between the two arms in the northeast corner of the bay and an area lying behind the big lake on the west. The outer coast towards Marmot Island has a scanty fringe of short scrubby timber with no commercial value and practically inaccessible for a water logging operation. Much of the timbered area on the west side of the bay has a heavy percentage of dead material being especially bad in this respect in the territory south of the large lakes and on out towards the coast. The dead timber areas can be picked out very well from the mountain top between Izhut and Danger Bays when the light is favorable.

The low, rolling country between Izhut Bay and Cape Kostromitinof is much cut up with lakes, large and small, and a large percentage of the timber stand is made up of poles. Many of these pole patches are dead or half dead and there are many acres where all trees above 10" D.B.H. are rotted off on the stump.

The northeast side of the bay from the head of the northeast arm towards the outer coast has a stand which is spotty and much cut up with open places. These spots have an outer fringe of trees with limbs growing down to the ground but inside or towards the "core" of these patches the limbs have been shed and the quality is better. Never on the Tongass Forest have I seen spruce seedlings so tolerant

of shade and vigorously growing under large mature trees which completely blanket them. There are numerous lakes on this chance which, as elsewhere on the island, are not shown on the map. They make traveling difficult when the lakes are timbered to the water's edge and there is no way to ascertain in advance of actually going around, which is the shorter way.

Seal Chance

Gross timbered area	51,456 acres
Commercial spruce timber	179,725 MBM
Standing dead timber	53,065 "

In this chance are the most extensive timbered and partially timbered areas on the island but unfortunately there is also a large amount of dead material throughout the stands. In some places the appearance of the stands is almost as bad as Whale Island. The soil appears to be deeper on Seal Chance than any other place on the island and the whole area is rolling rather than rugged. There are numerous ponds and small lakes on the chance and one good sized lake on the stream which comes into the head of Perenosa Bay.

As mentioned elsewhere in this report, the sailing chart of this region is very erroneous within the line of the harbor mouths of Seal and Perenosa Bays and the map which accompanies the report differs widely from the chart. Both bays have excellent harbors but local knowledge and extreme care is necessary in using them.

Pole patches are common throughout the chance and along much of the shore frontage is a strip of stunted, wind whipped timber of little or no commercial value.

This chance has the most value for its potential timber growing possibilities of any on the island.

The stream coming into the head of Perenosa Bay is a good red salmon stream and at the time we were there about June 1, 1933, there was a fishing camp there and several boats belonging to fish buyers.

N. W. Chance

Gross timbered area	26,496 acres
Commercial spruce timber	120,668 MBM
Standing dead timber	92,160 "

This chance includes all the territory from the entrance to Perenosa Bay on the north side to Raspberry Straits.

It is along Shuyak Strait that the dead timber reaches its maximum percentage of the stands. It is certain that a great deal of this damage has come in the last five years.

There is some excellent timber growing ground in the bay just east of Black Fox Bay as evidenced by what remains standing but the present crop is mostly dead or dying and the area is very limited.

The timber on the whole chance is somewhat stunted and short. The timbered areas are shallow in depth from the shore line inland and are ragged and patchy. The timber could not compete with timber from southeastern Alaska or Puget Sound for most uses but it is very valuable and useful to anyone trying to make a living in that part of the world.

In Alimvoak Bay there is no timber until the inner bay is reached and then it is very spotty and open.

Ban Island in Paramanof Bay has a shallow fringe of timber on the inner end of the island. In Foul Bay there is a belt of timber extending inland about three quarters of a mile flanked with spotty clumps of limby trees.

This chance carried the heaviest seed crop that I have ever seen. The trees, especially along the beach, are loaded with cones.

Respectfully submitted,



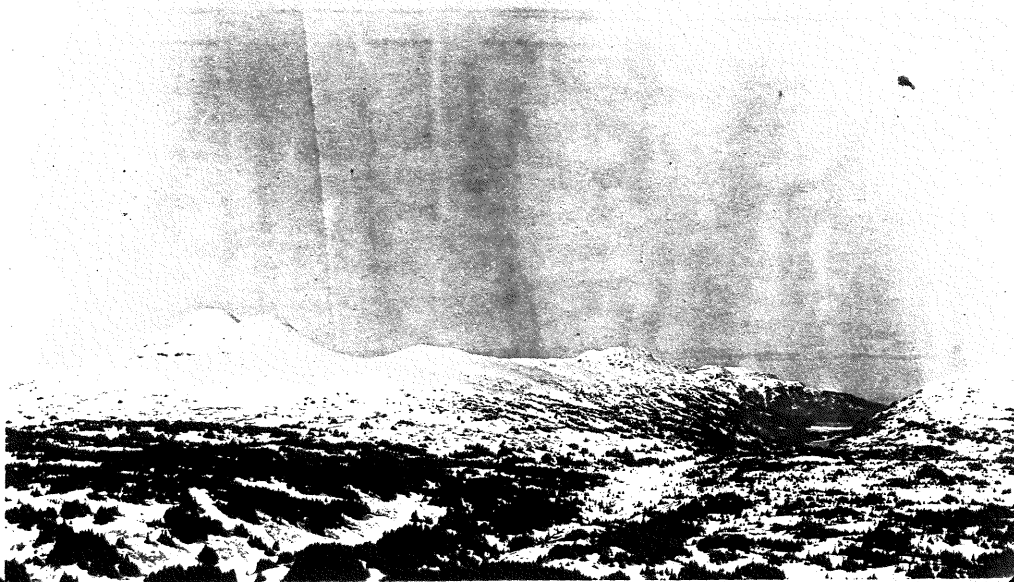
J. P. WILLIAMS
Forest Examiner

APPROVED: May 9 1934

Chas W. F. Lacey
Regional Forester

SUMMARY

Gross Timbered Area	Acres	Live Spruce	Dead	%	Total
		M	M		M
Litnik	29,952	336,100		φ	336,100
Danger	22,528	214,087		φ	214,087
Izhut	29,440	244,293	4,454	2	248,747
Seal	51,456	179,725	53,065	23	232,790
N. W.	26,880	124,508	92,160	43	212,828
	160,256	1,098,713	149,679	14	1,244,552
		6.7 7/8			79 1/8



1.

Looking toward Perenosa Bay from a mountain
on the east side of Danger Bay.



2.

A grass valley about one mile inland from
the head of Danger Bay.



1948 - no
change

3.

Typical of much of the Territory near
Seal Bay. Timber half dead.



4.

"Christmas trees" claiming the open places.



5

Grass, brush and barren in the Interior



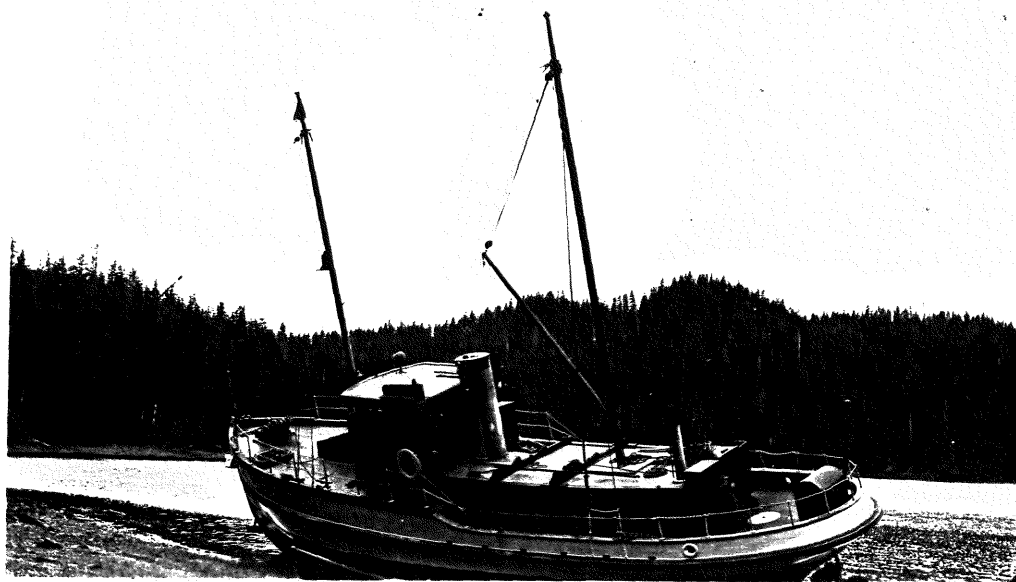
6.

Young spruce usurping the brushy and grassy places.



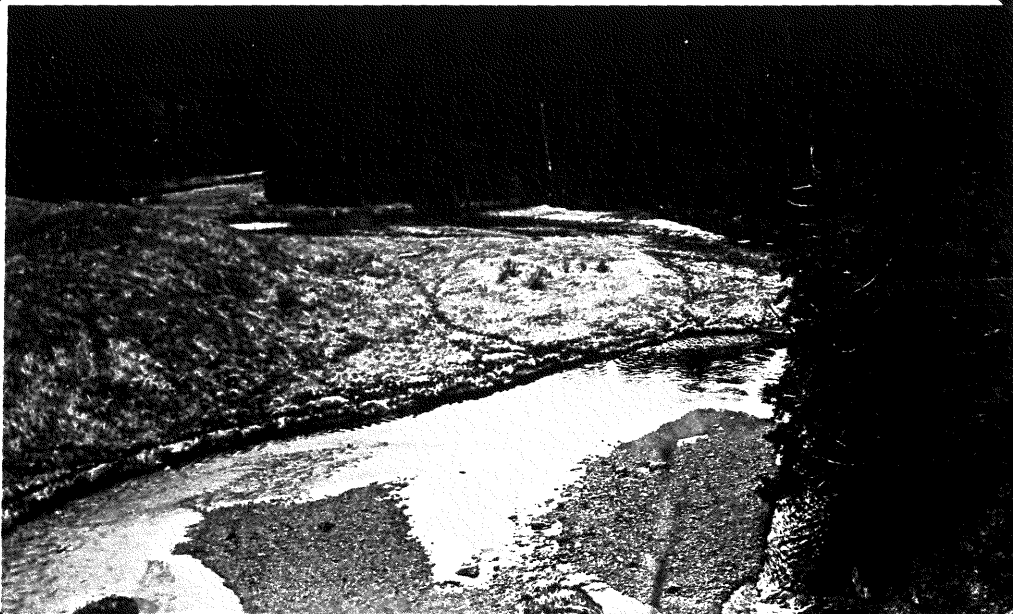
7.

Typical of a large part of the interior of Shuyak Island



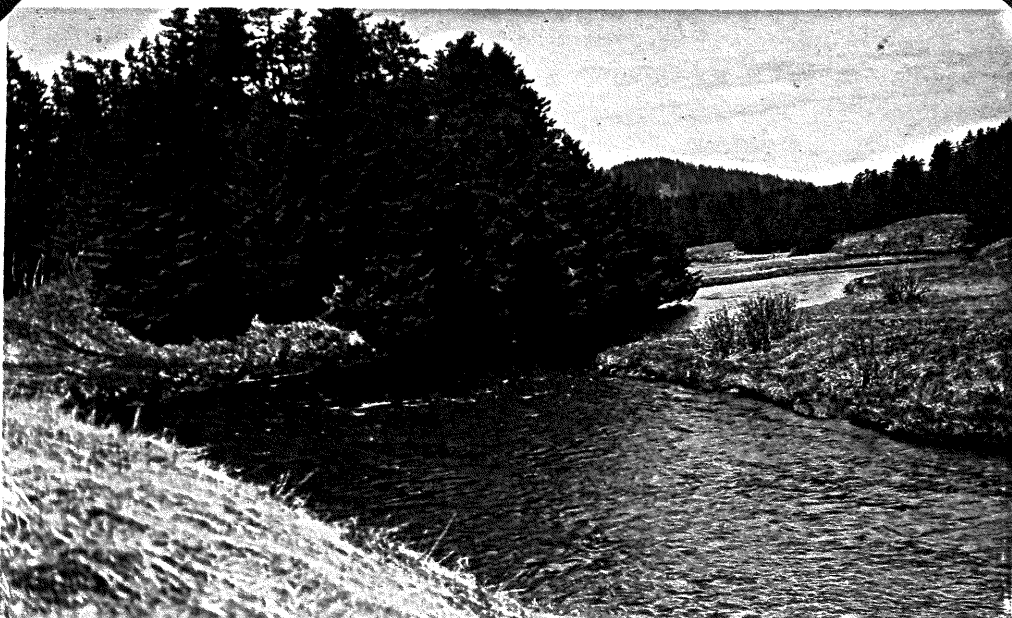
8.

The Forest Service launch "Chugach" beached for copper painting.



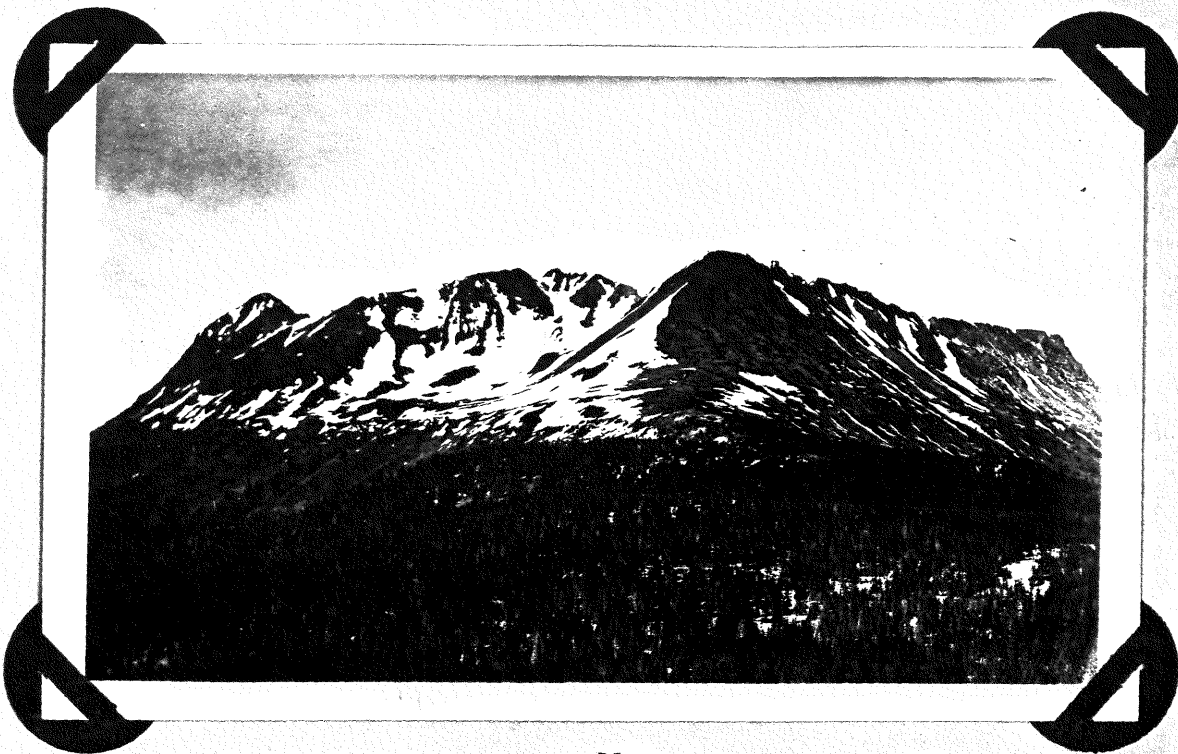
9.

A beautiful glade on Perenosa River.
Note old bear trail in the grass.



10.

Another view farther up the same stream.



11.

Another interior view in the middle
of May.